

REMARKS/ARGUMENTS

Amendments

Before this Amendment, claims 40-56 were pending in the application. Claim 40 is amended by this paper, and no claims are canceled or added. Claims 44-56 were previously withdrawn. Therefore, claims 40-43 are present for examination, and claim 40 is the independent claim. No new matter is added by these amendments.

Applicants believe this amendment places the application in condition for allowance, and respectfully request that the amendments be entered and the application as amended be reconsidered.

35 U.S.C. §112

The Final Office Action ("Office Action") has rejected claims 40-43 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Office Action objects that the limitation *wherein substantially all of a vibratable portion of the aperture plate comprises the dome shape* is not described in the specification because the embodiment shown in Applicant's Figure 3 includes a portion of the aperture plate, mounted to a support, that is not dome shaped. The Office Action interprets the limitation for purposes of examination to mean that substantially all of a portion of the aperture plate which is not directly mounted to the support member comprises the dome shape. Claim 40 has been amended to conform with the interpretation used in the Office Action, and Applicants believe the rejection to be overcome.

35 U.S.C. §103(a) Robertson, Maehara

The Office Action has rejected claims 40-43 under 35 U.S.C. §103(a) as being allegedly unpatentable over the cited portions of Robertson, et al., U.S. Patent 5,487,378 ("Robertson") in view of the cited portions of Maehara et al., U.S. Patent 4,533,082 ("Maehara"). Applicants respectfully traverse.

Claim 1 recites in part

electroforming a vibratable aperture plate ... the aperture plate further being formed to have a dome shape, mounting the vibratable aperture plate upon a support member wherein substantially all of a vibratable portion of the aperture plate not directly mounted to the support member comprises the dome shape.

The cited references, even in combination, do not teach or suggest such an aperture plate. The Office Action implicitly recognizes this deficiency in the cited references.

In support of the rejection, the Office Action argues that the combination of Robertson and Maehara could be further modified to arrive at Applicants' invention. Robertson shows a flat "nozzle array" 50. (Robertson Fig. 4a). Maehara shows a "nozzle disc" 13 that has a small outwardly curved area near the center of an otherwise flat disc. Maehara's nozzle disc has apertures only in the curved portion (Maehara Figs. 1 and 2). Maehara indicates that the curved portion is for "ejecting liquids in diverging trajectories". (Maehara col. 3 lines 7-8, Fig. 5).

The Office Action suggests that one of skill in the art would be motivated to dome Robertson's aperture plate to spread out the spray pattern as suggested by Maehara, and that because Robertson's aperture plate has apertures over its entire area, it would be advantageous to dome the entire plate to avoid "disrupt[ing] the spray pattern." (Office Action p. 4).

This argument fails on at least two grounds.

First, the Office Action provides no technical reasoning or evidence that the spray pattern would be disrupted if an aperture plate having apertures over its entire area were to be domed only near the center, and provides no reasoning or evidence that a disrupted spray pattern is an outcome to be avoided. Without such reasoning, there is no logical rationale for combining the references.

Second, one of skill in the art would not have any reason to modify the system of Robertson to include a domed aperture plate to "spread out" the spray pattern, because Robertson already provides a spray pattern with diverging trajectories. Note especially the similarity in the trajectories of the droplets depicted in Robertson's Figure 4a (72) and Maehara's Figure 5 (61), shown below. (Only the relevant portion of Maehara's Figure 5 is shown.)

FIG. 5

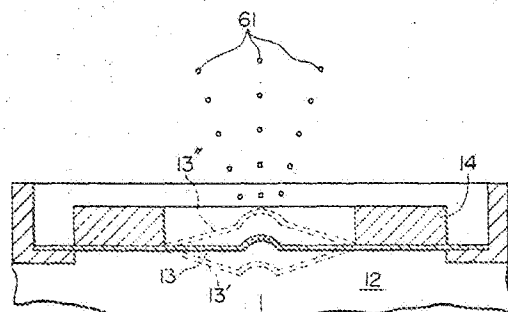


Figure 5 of Maehara

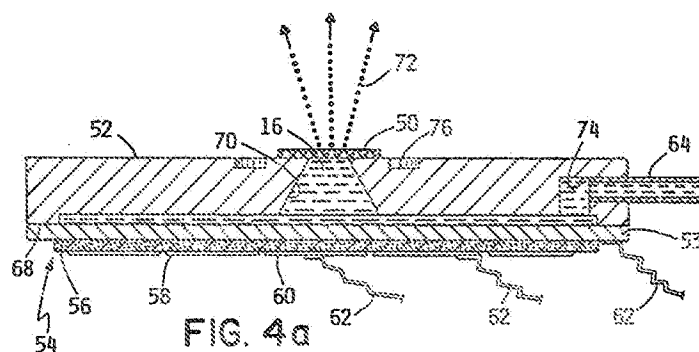


FIG. 4a

Figure 4a of Robertson

One of skill in the art would have no reason to seek out a second reference to provide a feature already provided in the primary reference. (See for example *Ex parte Rinkevich et al.*, BPAI May 29, 2007, Appeal No. 2007-1317).

The Office Action also alleges that it would have been an obvious matter of design choice to have formed the relevant portion of the aperture plate in a domed shape “since Applicant has not disclosed that this specific feature solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the entire unmounted portion being dome shaped or less than the entire unmounted portion being dome shaped.” (Office Action p. 4).

Applicants respectfully refer to their previous response filed January 6, 2009, which explains that the domed aperture shape has far greater bending rigidity when compared to a flat plate of the same thickness. This rigidity or stiffness results in a reduced deflection of the plate, and therefore a higher amplitude at the center, and greater delivery efficiency and higher aerosol flow. (See January 6, 2009 response, p. 6). Applicant has in fact pointed out that this specific feature solves a problem, is for a particular purpose, and that the claimed method would not work as well without it. The domed aperture plate is not simply an "obvious matter of design choice."

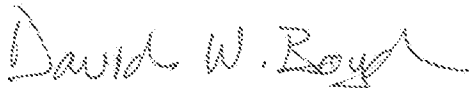
Robertson and Maehara, even in combination, do not teach or suggest all of the elements of Applicants' claim 40. Furthermore, the Office Action does not provide a proper rationale for combining these references, or for modifying the combination. Claim 40 is therefore believed allowable over Robertson and Maehara. Claims 41-43 depend from claim 40 and add further limitations, and are therefore also believed allowable for at least this reason.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,


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